

LISTING OF CLAIMS:

The following listing of claims replaces all previous versions and listings.

1. (Currently amended) A linear electric machine comprising:

a plurality of pairs of magnetic teeth circumferentially disposed such that respective surfaces of the plurality of pairs of teeth surround a space;

a yoke disposed around the teeth and magnetically connected to the teeth;

a plurality of coils mounted on the teeth; and

a movable core disposed in the space opposite the teeth to reciprocate transversely to the teeth, said movable core having a plurality of ~~first~~ permanent magnets and ~~a plurality of~~ as many magnetic inductors as the teeth disposed to face the teeth at axially opposite ends for providing a ~~respective plurality of~~ circumferentially formed N-S-pairs of magnetic poles on a peripheral surface of each end thereof to face the surfaces of the teeth and a magnet shielding plate disposed at axially middle portion thereof to magnetically separate the permanent magnets disposed at one end thereof from the permanent magnets disposed at the other end thereof

wherein:

said ~~first~~ permanent magnets are disposed ~~around a center axis of said movable core~~ between the magnetic inductors and polarized in directions perpendicular to radial directions of said movable core to polarize said magnetic inductors so that each of said permanent magnets disposed on one side of said magnet shielding plate is magnetized to have the polarity opposite to the polarity of an adjacent one of the permanent magnets disposed on the other side of the magnet shielding plate.

2. (Canceled)

3. (Previously presented) The linear electric machine as claimed in claim 1, wherein said magnetic teeth extend perpendicularly to the axial direction of said movable core.

4. (Previously presented) The linear electric machine as claimed in claim 1, wherein said magnetic shielding plate is made of a non-magnetic material.

5. (Previously presented) The linear electric machine as claimed in claim 1, wherein said magnetic shielding plate comprises a permanent magnet plate that has a plurality of pairs of magnetic poles that are opposite in polarity of the magnetic poles of the first permanent magnets adjacent thereto.

6. – 7. (Canceled)

8. (Previously presented) The linear electric machine as claimed in claim 1, wherein said first permanent magnets project from said inductors to be located between the adjacent teeth.

9. (Canceled)

10. (Previously presented) The linear electric machine as claimed in claim 1, wherein said coils are connected to an ac power source to reciprocate said movable core.

11. (Previously presented) The linear electric machine as claimed in claim 1,

wherein said movable core is connected to means for reciprocating to generate electric power at the coils.

12. (New) The linear electric machine as claimed in claim 1, wherein each of said magnetic inductors comprises a plurality of radially arranged magnetic plates.

13. (New) The linear electric machine as claimed in claim 12, wherein each of said magnetic plates has a rolled surface disposed in parallel to a direction of motion of said movable core.

14. (New) A linear electric machine comprising:
a generally cylindrical stator including a magnetic yoke and a plurality of pairs of magnetic teeth extending from said yoke and circumferentially disposed to surround a central space;
a plurality of coils mounted on said magnetic teeth for polarizing said magnetic teeth in a controlled manner when energized; and
a generally cylindrical movable core disposed in said central space to reciprocate transversely to said magnetic teeth when said coils are energized, said movable core having as many magnetic inductors as said magnetic teeth circumferentially disposed at opposite ends thereof to face said magnetic teeth, permanent magnets circumferentially disposed between said magnetic inductors and a magnet shielding plate disposed to magnetically separate said magnetic inductors and permanent magnets disposed at one end of said movable core from those disposed

at the other end thereof so that said movable core provides a plurality of circumferentially formed N-S-pairs of magnetic poles on a peripheral surface of each of opposite ends thereof;

wherein:

each of said permanent magnets disposed at one side of said magnetic shielding plate has the polarity opposite to the polarity of adjacent one of said permanent magnets disposed on the other side of said shielding plate.

15. (New) The linear electric machine as claimed in claim 14,
wherein each of said magnetic inductors comprises a plurality of radially arranged magnetic plates.

16. (New) The linear electric machine as claimed in claim 15, wherein each of said magnetic plates has a rolled surface disposed in parallel to a direction of motion of said movable core.